

**AMENDMENTS TO THE DRAWINGS:**

The attached drawing sheet includes changes to Fig. 1, wherein the English language translation of Fig. 1 has been provided.

Attachment: Replacement Sheets

Annotated Sheets Showing Changes

**REMARKS**

**Summary of the Office Action**

In the Office Action, the drawings (Fig. 1) and claims 1-27 stand objected to.

Claims 1-27 have been rejected under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph.

Claims 1-4 and 16-18 have been rejected under 35 U.S.C. § 102 (e), as being anticipated by U.S. Patent No. 6,463,121 to *Milnes*.

Claims 16-18 have been rejected under 35 U.S.C. § 103 (a), as being unpatentable over *Milnes*.

**Summary of the Response to the Office Action**

Applicant proposes submitting an English language translation of Fig. 1, and amending claims 1 and 16. Accordingly, claims 1-27 are pending for further consideration.

**Objection to the Drawings**

In the Office Action, the drawings stand objected to.

Specifically, the Office Action requires an English language translation of Fig. 1. With regard to the aforementioned objection, Applicant has hereby provided an English language translation of Fig. 1.

Accordingly, Applicant respectfully requests withdrawal of the objection to the drawings.

**Claim Objections**

In the Office Action, claims 1 and 16 have been objected to for minor informalities. With regard to the objection to claims 1 and 16, Applicant respectfully thanks the Examiner for the helpful suggestions in amending the claims, and likewise proposes amending claims 1 and 16 as shown above. Accordingly, Applicant respectfully requests withdrawal of the objections to claims 1 and 16.

With regard to claims 2-15 and 17-27, the Office Action indicates that the claims fail to set forth their dependencies. Further, with regard to claims 5-15 and 19-27, the Office Action indicates that the claims include improper multiple dependencies. The Office Action further

indicates that the August 21, 2003 Amendment, which was held as being non-compliant, was not entered. Applicant respectfully asserts that further to receipt of a "Notice of Non-Compliant Amendment" dated December 2, 2004, a Preliminary Amendment addressing the non-compliance issues was filed on December 8, 2004, as evidenced by the attached copy of the Preliminary Amendment and USPTO stamped postcard. Accordingly, Applicant respectfully requests withdrawal of the objections to claims 2-15 and 17-27.

With regard to claim 16, the Office Action requires claim 16 to include method steps, and further requires terms such as "those areas" and "selected area" to have proper antecedent basis. Applicant respectfully notes that the amendments per the December 8, 2004 Preliminary Amendment address the aforementioned objections. Accordingly, Applicant respectfully requests withdrawal of the objections to claim 16.

**Rejection under 35 U.S.C. 112, 2<sup>nd</sup> Paragraph**

In the Office Action, Claims 1-27 have been rejected under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph.

With regard to claim 1, the Office Action requires clarification for the phrase "the selected area is covered when a dental X-ray image is made." Applicant respectfully asserts that as discussed on page 3, lines 2-4 of the specification, the X-ray image made is a new X-ray image. Claim 1 has been amended to clarify this point.

With regard to claim 16, the Office Action requires clarification for the phrase "the selected area can be depicted in a dental X-ray image." Applicant respectfully asserts that as discussed on page 4, lines 15-16 of the specification, the X-ray image made is a new X-ray image. Claim 16 has been amended to clarify this point.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. 112, 2<sup>nd</sup> Paragraph rejection of claims 1-27.

**All Claims are Allowable**

In the Office Action, claims 1-4 and 16-18 have been rejected under 35 U.S.C. § 102 (e), as being anticipated by U.S. Patent No. 6,463,121 to *Milnes*. Claims 16-18 have been rejected under 35 U.S.C. § 103 (a), as being unpatentable over *Milnes*.

Since the present application includes claims 1-27, which were pending prior to the filing of the December 8, 2004 Preliminary Amendment (as acknowledged in the Office Action), and since the Office Action has rejected only claims 1-4 and 16-18 under 35 U.S.C. § 102 (e) or § 103 (a), Applicant assumes that claims 5-15 and 19-27 include allowable subject matter.

Nevertheless, Applicant traverses the rejection of claims 1-4 and 16-18 for the following reasons.

With regard to independent claim 1, Applicant respectfully asserts that *Milnes* fails to teach or fairly suggest a system for positioning a dental X-ray apparatus, including, "a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored ... a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for the dental X-ray apparatus ... wherein the dental X-ray apparatus is controllable by said control data such that the selected area is covered when a new dental X-ray image is made," as recited in independent claim 1, as amended.

Support for these features recited in claim 1 can be found at least on page 2, line 14 to page 5, line 9, and further on page 5, line 25 to page 7, line 9 of the originally filed specification, and in Figs. 1-3 of the originally filed drawings. Specifically, as shown in Figs. 1-3, the present invention provides a system for positioning a dental X-ray apparatus. The system includes an input and output device (i.e. a keyboard and a display monitor) for interactive control.

The system further includes a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored. This information concerning the X-ray apparatus preferably relates to position parameters of the movable parts. Thus a certain area of an X-ray image can be

associated with the corresponding parameters of the X-ray apparatus. Vice versa, the X-ray apparatus can be controlled by the X-ray image.

The system further includes a computer interface, via which information can be interchanged with the dental X-ray apparatus, and means (i.e. a pointing device) for selecting areas in the digitized dental X-ray image. The system also includes a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for the dental X-ray apparatus. These calculations are preferably based on the path information, which has been assigned to the imaging information. The path information gives knowledge of the movement of the X-ray apparatus carried out at a certain point of time. Thus the coordinates of the X-ray apparatus are given in relation to a certain point of time. Based upon the features described above, the dental X-ray apparatus is controllable by the control data such that the selected area is covered when a new dental X-ray image is made.

With regard to claims 1-4 and 16-18, the Office Action cites *Milnes* as teaching or suggesting the system and method recited in claims 1-4 and 16-18.

*Milnes*, as illustrated in Figs. 1-8 (especially Figs. 1 and 2) thereof, discloses an X-ray system 100 and method including a display device 110, a gantry 130 having an X-ray generator 132, a table 140 having an X-ray sensor 142, and an X-ray control system 120 connected to the display device, the gantry and the table, (Col. 3:32-37). The X-ray control system includes user input 122 for indicating the position of the next X-ray exposure, (Col. 3:47-48). The X-ray control system receives X-ray data from the sensor, processes the data to form an X-ray image, displays the X-ray image on the display device and shifts the X-ray generator relative to the X-ray sensor, (Col. 3:65 – Col. 4:9). The amount and direction of shift is accurately determined using data from the previous X-ray image, (Col. 2:1-3 and Col. 7:1-4).

Contrary to the recitation in independent claim 1 of the present invention, *Milnes* clearly does not teach or fairly suggest a dental X-ray apparatus, including, “a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored ... a processing unit which effects

calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for the dental X-ray apparatus ... wherein the dental X-ray apparatus is controllable by said control data such that the selected area is covered when a new dental X-ray image is made," as recited in independent claim 1, as amended.

Specifically, whereas *Milnes* discloses the use of data from the previous X-ray image for determining the amount and direction of shift of the X-ray generator relative to the X-ray sensor (see Col. 2:1-3 and Col. 7:1-4 of *Milnes*), *Milnes* clearly does not disclose the storage and/or use of information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image.

As discussed above for the present invention, the present invention X-ray system includes a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored. This information concerning the X-ray apparatus preferably relates to position parameters of the movable parts. Thus a certain area of an X-ray image can be associated with the corresponding parameters of the X-ray apparatus. Vice versa, the X-ray apparatus can be controlled by the X-ray image.

*Milnes* simply teaches no such storage or use of information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image.

Further, as exemplified by the discussion in Col. 5:42-55 of *Milnes*:

"Image processor 725 generates images 701 based on the data received from image acquisition system 730 and displays the images on its display. An operator selects a location within the image shown on the display and the information regarding the selected location is transferred to system controller 710. System controller 710 processes the information received from the operator and instructs positioner 720 as to the desired positioning of the patient relative to the X-ray source."

Thus, as emphasized above, *Milnes* clearly does not disclose the storage and/or use of information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image.

As discussed in the present invention specification, by using information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image, and controlling the X-ray apparatus based upon such information, a user is able to ascertain movement of the X-ray apparatus carried out at a certain point of time. Thus the coordinates of the X-ray apparatus are given in relation to a certain point of time, (see page 3, lines 1-8 of the present invention specification). The knowledge of the X-ray apparatus coordinates in relation to the X-ray image make it possible to obtain X-ray images of details in a more efficient manner, as compared to the conventional X-ray apparatus of *Milnes*.

Therefore, based upon the aforementioned deficiencies in the teachings of *Milnes*, Applicant respectfully asserts that *Milnes* fails to teach or fairly suggest a system for positioning a dental X-ray apparatus, including, "a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored ... a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for the dental X-ray apparatus ... wherein the dental X-ray apparatus is controllable by said control data such that the selected area is covered when a new dental X-ray image is made," as recited in independent claim 1, as amended.

As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

*Verdegaal Bros. v. Union Oil Co. Of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

Moreover, as pointed out in M.P.E.P. § 2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art". *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). Since these criteria have not been met, Applicant respectfully asserts that the rejections under 35 U.S.C. § 102 (e) and § 103 (a) should

be withdrawn because *Milnes* does not teach or suggest each feature of independent claim 1, as amended.

In view of the above arguments, Applicant respectfully requests the rejection of independent claim 1 under 35 U.S.C. § 102 be withdrawn. Additionally, claims 2-15, which depend from independent claim 1, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

#### Independent claim 16

With regard to independent claim 16, Applicant respectfully asserts that *Milnes* fails to teach or fairly suggest a method of positioning one of an emitter and a detector of a dental X-ray apparatus using an existing digitized dental X-ray image and information concerning the dental X-ray apparatus and assignable to the digitized dental X-ray image, the method including the steps of, “loading and displaying at least one digitized dental X-ray image ... determining coordinates of areas, with reference to the digitized dental X-ray image, which are to be depicted in another X-ray image ... loading information concerning the dental X-ray apparatus ... carrying out computation on the basis of the digitized X-ray image, relevant information concerning the dental X-ray apparatus, and ~~the~~ a selected area, in order to ascertain control data which controls the dental X-ray apparatus such that the selected area can be depicted in a new dental X-ray image,” as recited in independent claim 16, as amended.

Applicant respectfully asserts that independent claim 16 is allowable for at least the reasons presented above for the allowance of independent claim 1, and the additional features recited therein. In the interest of avoiding redundant arguments, the reasons for allowance of independent claim 16 are not repeated herein. Additionally, claims 17-27, which depend from independent claim 16, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.



**CONCLUSION**

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 04-2223. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

**DYKEMA GOSSETT PLLC**

By: 

Adesh Bhargava

Reg. No. 46,553

Dated: April 18, 2005

DYKEMA GOSSETT PLLC  
1300 I Street, N.W., Suite 300 West  
Washington, D.C. 20005  
(202) 906-8696